

By the present Amendment, Claim 1, 2, 9 and 33 have been canceled without prejudice so that the rejections of these claims are moot. Also, by the present Amendment, Claims 30 and 31 have been rejoined to this application. Accordingly, Claims 8, 10-13, 16-29, 32, 34-37, 39, 44, and 49-53 are now pending in the subject application.

The restriction requirement and the rejections of Claims 8, 10-13, 16, 29, 32, 34-37, 39, 44, 49 and 53 are addressed separately below.

#### **Restriction Requirement**

On page 2, items 1 and 2, some confusion is believed to have resulted from the use of the word 'infrared' in the description of some of the species resulting from the restriction requirement. In the description of species for the restriction requirement, the word "infrared" should be deleted from all species descriptions because the specification discloses use of wavelengths beyond the infrared (IR) region of the electromagnetic radiation spectrum, including ultraviolet (UV), visible (VIS), and the radio-wave range, as disclosed at page 6 of the specification.

The Groups of Species should thus read as follows:

1. A method of detecting the presence of water based on the principle of [infrared] radiation absorption.
2. A method of detecting the presence of water based on the principle of luminescence.
3. A method of detecting the presence of a water soluble substance based on the principle of [infrared] radiation absorption.
4. A method of distinguishing between water and water vapor based on the principle of [infrared] radiation absorption.
5. A method of detecting fungus using electromagnetic radiation.

Also, Claims 30 and 31 should be rejoined for examination in this application and such action is hereby requested.

### **Specification**

The Examiner's comments regarding the paragraph at page 5, lines 21-23 have been noted, and the paragraph has been amended to eliminate the noted informality. Withdrawal of the objection is requested.

### **Information Disclosure Statement**

Attached is an information disclosure statement complying with the requirements of M.P.E.P 609 and 707.05(e) accompany this paper. Consideration of the documents cited in the information disclosure statement is requested.

### **Rejection of Claims 1, 2 and 9 under 35 U.S.C. 102(b) based on *Dadachanji* (GB 2 304 444)**

On page 2, items 4 and 5 of the Office Action, Claims 1, 2 and 9 were rejected under 35 U.S.C. 102(b) based on *Dadachanji* (GB 2 304 444). By the present Amendment, Claims 1, 2 and 9 have been canceled without prejudice so that the rejection of these claims are moot. Withdrawal of the rejection is requested.

### **Rejection of Claims 10-13, 16, 18-23, 25-28, 32-37, 39-44, 49-50, and 52-53 under 35 U.S.C. 103(a) based on *Dadachanji* (GB 2 304 444)**

#### **A. Applicable Legal Standards**

As to the test for obviousness under 35 U.S.C. 103(a), *In re Dembiczak*, 175 F.3d 994, 50 U.S.P.Q.2d 1614 (Fed.Cir. 1999) states "A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (Supp.1998); see *Graham v. John Deere Co.*, 383 U.S. 1, 14, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ 459, 465 (1966). The ultimate determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. See *Graham*, 383 U.S. at 17-18, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ at 467; *Miles Labs., Inc. v. Shandon Inc.*, 997 F.2d 870, 877, 27 USPQ2d 1123, 1128 (Fed.Cir.1993)."

It is further clear that motivation for combining references or generally available knowledge must be demonstrated to sustain assertion of obviousness. *In re*

*Sang Su Lee*, \_\_ F.3d, 2002 WL 77144 (Fed. Cir. 2002) states “”The factual inquiry whether to combine references must be thorough and searching.” *Id.* It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. *See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed.Cir.2000) (“a showing of a suggestion, teaching, or motivation to combine the prior art references is an ‘essential component of an obviousness holding’ “) (quoting *C.R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed.Cir.1998)); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed.Cir.1999) (“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”); *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed.Cir.1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed.Cir.1988) (“ ‘teachings of references can be combined *only* if there is some suggestion or incentive to do so.’ “) (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed.Cir.1984)).

The need for specificity pervades this authority. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed.Cir.2000) (“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed.Cir.1998) (“even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.”); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed.Cir.1992) (the examiner can satisfy the burden of showing obviousness of the combination “only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references”.”

## B. *The Dadachanji Publication (GB 2 303 444)*

*Dadachanji* (GB 2 303 444) states at page 3 "... it is possible to shine an infrared beam at the target to be assessed, the beam comprising infrared radiation of, say, two wavelengths, one being a wavelength which is strongly absorbed by water and the other being a wavelength not selectively absorbed by water, and to measure the relative strengths of the wavelengths in the reflected radiation to arrive at an indication of the dampness of the surface at which the instrument is directed.

The device embodying the invention is particularly useful as a surveying tool to find indications of excess moisture on walls and parts of buildings without the need to make contact with the surface of such walls or parts."

## C. **Claims 10-13, 16, 18-23, 25-28, 32-37, 39-44, 49-50, and 52-53**

The method of Claim 10 recites steps of exposing, sensing and determining whether a water-suspect area exists in a structure. In addition, Claim 10 recites testing the water-suspect area and determining whether water is present in the structure, based on the testing. The Office Action admits that *Dadachanji* fails to disclose any testing of a water-suspect area and determining whether it contains water based on the testing. The Office Action alleges it is common in the art to repeat the results of any measurement so as to increase the reliability of the test. However, Claim 10 has been amended to recite that the testing is performed with at least one of a moisture detector, capacitance meter, endoscopic probe, or resistivity meter. *Dadachanji* does not teach or even suggest, after the use of radiation to detect a water-suspect area, testing of a water-suspect area using one or more of a moisture detector, capacitance meter, an endoscopic probe, and a resistivity meter to determine whether the water-suspect area contains water. Nor does any generally available knowledge suggest testing in combination with use of electromagnetic radiation to detect water in a structure. The method provides the ability to rapidly locate water-suspect areas, then follow-up with more precise methods to confirm the presence of water. There is no motivation in the prior art to combine use of radiation with testing techniques as claimed in Claim 10. The Office Action has not indicated any specific prior art or knowledge that would have suggested the desirability of using other techniques than radiation sensing to confirm the presence of water in a structure. *Dadachanji* certainly makes no such suggestion, but in fact appears to state that contact techniques are not desirable ("A device embodying the invention is particularly useful as a surveying tool to find indications of excess moisture on walls and parts of buildings without the need to make

contact with the surface of such walls or parts.” Thus, *Dadachanji* teaches away from the invention as claimed in Claim 10 as amended. Accordingly, it is submitted that Claim 10 as amended patentably distinguishes over *Dadachanji*.

Claim 11 depends from Claim 10 and includes all limitations of that claim and additional limitations that are not disclosed by the prior art. Claim 11 recites determining the source of water if present in the structure. *Dadachanji* and the prior art in general fails to disclose any step of determining what the source of a water problem in a structure is in combination with the method steps recited in Claim 10. Thus, Claim 11 patentably distinguishes over the prior art.

For similar reasons to those stated above with respect to Claim 10, Claim 12 as amended patentably distinguishes over the prior art. *Dadachanji* and the prior art in general fail to disclose the use of radiation to detect a water-suspect area, followed by use of testing with a device such as a moisture detector, a capacitance meter, an endoscopic probe, and a resistivity meter to confirm its presence. Accordingly, Claim 12 as amended patentably distinguishes over the prior art.

Claims 13, 16, and 17 depend from Claim 12 as amended and include all of the limitations of that Claim plus additional limitations that are not disclosed by the prior art. For example, Claim 16 recites determining the source of water detected using radiation and testing. Nowhere does *Dadachanji* or any other cited art, or knowledge generally available to a person skilled in the art, disclose this combination of method steps or provide any motivation or suggestion that a combination of prior art or knowledge should be made and would work for its intended purpose. Also, Claim 17 recites that the exposed area of the structure is at least one square meter. Again, the prior art and knowledge available to those of ordinary skill fails to disclose this feature of the claimed invention, which makes it possible to scan relatively large portions of a structure in a single exposure. The prior art and knowledge available to those of ordinary skill fails to disclose this feature of the invention in combination with the recited method steps, nor does it disclose the advantages made possible thereby. Accordingly, for these reasons as well as those stated above with respect to Claim 12 as amended, it is submitted that Claim 13, 16 and 17 patentably distinguish over the prior art.

Claim 18 recites that the exposure and reference wavelengths used to expose a predetermined area of the structure are not absorbed by the material composing such structure. Because the exposure and reference wavelengths are not significantly

absorbed by the material composing the structure, the electromagnetic radiation can penetrate inside of the surfaces of a structure to detect water not only at the surface but also inside of the structure where it is not visible to the eye. *Dadachanji* fails to disclose this feature of the present invention, and does not provide the advantage of being able to detect latent water problems that cannot be detected with the unaided eye. Nor is there any knowledge generally available to a person of ordinary skill in the art that would suggest how *Dadachanji*'s techniques could be modified to obtain the advantages of the invention, notwithstanding assertions in the Office Action to the contrary. In particular, the Office Action alleges that "...it is a generally well recognized principle of infrared analysis that in order to simplify the analysis and improve reliability, the selected exposure wavelengths and reference wavelengths should not be significantly absorbed by any of the other materials likely to be present in the sample being analyzed." There is no evidence that selection of wavelengths should be done so as to avoid absorption of radiation by the structure was well-known to those of ordinary skill at the time the invention was made. *Dadachanji* certainly makes no such suggestion. Nor is it inherent in *Dadachanji*'s technique since it uses reflectance of radiation to detect moisture as opposed to transmission. Moreover, there is no suggestion or motivation in the prior to support the combination of the alleged general knowledge with *Dadachanji*. The Office Action has therefore engaged in impermissible hindsight reasoning. Accordingly, Claim 18 patentably distinguishes over the prior art.

Claims 19-23, 25-28, 32-37, 39-44, 49-50, and 52-53 depend from Claim 18 and include all of the limitations of that claim plus additional limitations that are not disclosed in the prior art. For example, Claim 21 recites that the positioning of the generator and sensor unit are performed so that the sensor unit receives radiation from the generator after it passes through the structure. This feature permits water inside of the structure to be detected, even though it may not be visible to the unaided eye. Neither *Dadachanji* nor knowledge that would have been available to a person of ordinary skill disclose the positioning of the generator and sensor unit so as to receive radiation passing through the structure to detect water using exposure and reference wavelengths. Accordingly, it is submitted that Claim 21 as amended patentably distinguishes over the prior art. Claim 23 recites that the generator of the exposure and reference wavelengths is a quartz halogen light. The Office Action admits that *Dadachanji* fails to disclose any such generator. The quartz halogen light is relatively

inexpensive yet generates relatively intense radiation over a broad spectral range. Use of a quartz halogen light as a generator in connection with the method steps recited in Claim 23 is not disclosed in either *Dadachanji* or knowledge that would have been available to a person of ordinary skill at the time the invention was made. Nor is there any motivation for combining the alleged knowledge with *Dadachanji*. Accordingly, Claim 23 would not have been obvious to a person of ordinary skill in the art. Claim 27, 28, and 29 recite that the sensor unit includes a spectrometer, spectroradiometer, and hyperspectral imaging system. These devices have the capability to detect intensity levels over a range of wavelengths including the exposure and reference wavelengths. These devices permit a user to select an exposure and reference wavelength from the device's spectral output. Because different structures have different absorption or reflectance characteristics, use of the devices recited in Claims 27-29 provides a relatively easy way to determine and use exposure and reference wavelengths effective for the structure under analysis. *Dadachanji* does not disclose the use of a spectrometer. Nor is there any knowledge that would have been available to a person of ordinary skill at the time the invention was made that would have lead such person to modify *Dadachanji* with the alleged knowledge. Accordingly, Claims 27-29 patentably distinguish over the prior art. Claim 32 recites a step of testing to confirm that a water-suspect area includes water. *Dadachanji* does not disclose testing in combination with the other steps of the method. This combination of steps permits water-suspect areas to be rapidly located using radiation and then tested to confirm the presence of water in a water-suspect area. *Dadachanji* teaches away from this aspect of the invention in stating "The device embodying the invention is particularly useful as a surveying tool to find indications of excess moisture on walls and parts of buildings without the need to make contact with the surface of such walls or parts." Hence, the Office Action has impermissibly combined unproven allegations of knowledge of a person of ordinary skill without motivation and contrary to the teachings of *Dadachanji*. Accordingly, it is submitted that claim 32 would not have been obvious to a person of ordinary skill in the art. Claims 34-37 recite that the testing is performed by a moisture meter, capacitance meter, resistivity meter, and an endoscopic probe, respectively. Use of these devices for testing as confirmation of water in suspect areas determined by radiation exposure is not taught by the prior art. In fact, *Dadachanji* appears to teach away from the invention by suggesting the desirability of using its radiation methods to dispense with the need to use any such devices as recited in Claims 34-37. Moreover, *Dadachanji*

and the prior art in general fail to teach the use of an endoscopic probe to confirm presence of water in a structure. The Office Action alleges that it is common in the art and good engineering practice to repeat and confirm the results of any measurement so as to increase reliability of the test. This statement is not always true and would depend upon the context. In fact, repeatedly using radiation exposure to confirm a water-suspect area would be counter to the purpose of using the radiation exposure to rapidly reveal water-suspect areas, followed by use of the devices recited in Claims 34-37 to confirm its presence. Accordingly, Claims 34-37 patentably distinguish over the prior art. Claims 39-41 recite steps of using a capacitance meter, endoscopic probe, and conductive pins to determine whether a water-suspect area contains water. Neither *Dadachanji* nor the prior art in general, nor any knowledge generally available to a person of ordinary skill, would have lead such person to combine techniques using a capacitance meter, endoscopic probe, and/or conductive pins to confirm presence of water in an area of a structure suspected of containing water as a result of radiation sensing. Moreover, the use of the endoscopic probe is certainly not well-known in the art and is not disclosed in *Dadachanji*. There is further no motivation or suggestion that *Dadachanji* or alleged knowledge in the art that would have lead a person of ordinary skill in the art to combine or modify *Dadachanji* or alleged knowledge to obtain the claimed invention. As admitted in the Office Action, *Dadachanji* does not disclose determining the source of water in an area confirmed by testing to include water after radiation sensing. There is no teaching in *Dadachanji* or the prior art in general that even suggests the claimed combination of steps, nor provides any motivation or suggestion for making such combination. Accordingly, Claim 42 patentably distinguishes over the prior art. Claim 43 recites detecting the pH of water, and determining that the source of water is not rain if the pH is relatively acidic. Neither *Dadachanji* nor any well-known knowledge disclose this technique, which is useful for determining whether rain is the source of the water. This test can be used to assist a person in determining the source of water in a structure for repair and remediation. Neither *Dadachanji* nor any well-known knowledge disclose this feature or provide the advantages made possible thereby. Accordingly, Claim 43 patentably distinguishes over the prior art. Claim 44 discloses determining the source of water in a structure by sensing its salinity to determine whether the water is rising from the ground. Neither *Dadachanji* nor the prior art in general disclose this feature of the invention that makes it possible to determine whether ground water is the source of a

water problem so that appropriate repair and remediation can be used to ameliorate the problem. The prior art fails to disclose this feature of the invention or to provide the advantages made possible thereby.

Claim 49 recites a method of determining whether the source of water is condensation by determining whether the water is relatively pure. If the water is not pure, than it is determined not to be water. Neither *Dadachanji* nor the prior art in general disclose this feature of the invention that makes it possible to determine whether condensation is the source of a water problem. The claimed technique is certainly not disclosed in *Dadachanji* nor the prior art in general and provides the advantage of being able to determine whether condensation is the source of a water problem. Accordingly, Claim 49 patentably distinguishes over the prior art. Thus, for these reasons as well as the reasons stated above with respect to Claim 18, Claims 23, 25-28, 32, 34-37, 39-44, 49-50, and 52-53

patentably distinguish over the prior art. Withdrawal of the rejection is requested.

**Rejection of Claims 8, 17, 24, 29 and 51 under 35 U.S.C. 103(a) based on *Dadachanji* in view of *Hellmuth et al.* (DE 195 20 035)**

On page 11, item 8 of the Office Action, Claims 8, 17, 24, 29 and 51 were rejected under 35 U.S.C. 103(a) based in *Dadachanji* in view of *Hellmuth et al.* (DE 195 20 035).

**A. *Hellmuth et al.* (DE 195 20 035)**

In its Abstract, *Hellmuth et al.* (DE 195 20 035) states:

BASIC- ABSTRACT - The measurement is made with an infrared vidicon camera (1) equipped with a replaceable infrared band-pass input filter (2) for selection of the component of light reflected from the object (5) within or outside the absorption spectral band of water. The filter is preceded by an optical system (3) adapted for e.g. a 250 or 500 W lamp (4) having a broad emission spectrum. The recorded measurements are compared and the image is calibrated in units of moisture for plane presentation using an image processing system.

USE/ADVANTAGE – For e.g. building materials, foodstuffs, drugs or vegetation. Large object can be investigated at low cost and the measurements presented in an easily accessible [sic] form.

As correctly noted in the Office Action, neither *Dadachanji* nor *Hellmuth et al.* disclose any method in which an area of a structure greater than one square meter is exposed to radiation to detect the presence of water in the structure. The Office Action appears to rely on the fact that *Hellmuth et al.* states that its system is used for measuring moisture in large objects. ‘Large’ is a relative term that could have different meanings depending on context. *Hellmuth et al.* mentions that its system can be used to measure moisture in building materials, foodstuffs, drugs or vegetation, but does not mention anything so large as a structure such as a house or building as recited in Claim 1. Moreover, the Office Action appears to state that the use of long-range or wide-angle observation by the *Hellmuth et al.* ‘s infrared vidicon necessarily means that the exposure area is more than one square meter. Merely because the sensor receives light obliquely does not mean that its lamp 4 exposes an area of an object that is greater than one square meter. Moreover, the *Dadachanji* patent discloses that radiation is “beamed” to a body in its method. This would imply a thin light beam such as a laser that would irradiate less than one square meter of the structure. Accordingly, *Dadachanji* appears to teach away from *Hellmuth et al.* so that there is no teaching or suggestion that would have lead one of ordinary skill to combine the two documents as done in the Office Action. The advantage of this feature in the claimed invention is that relatively large areas of a structure can be scanned for the presence of water-suspect areas, which means that the structure can be examined relatively quickly. *Dadachanji* and *Hellmuth et al.* fail to disclose this feature of the claimed invention or the advantages afforded thereby. Accordingly, Claim 8 as amended patentably distinguishes over the prior art.

Claim 17 depends from Claim 12 as amended and includes all of the limitations of that claim. Because *Hellmuth et al.* fails to disclose the deficiencies of *Dadachanji* previously noted with respect to Claim 12, Claim 17 patentably distinguishes over the prior art. In addition, *Dadachanji* states that its radiation is “beamed” to the body in its method. This implies a laser beam with a relatively small beam width less than a square centimeter, which would not be remotely capable of irradiating an exposed area on a structure with a size of a square meter or more. Thus, *Dadachanji* teaches away

from *Hellmuth et al.* and the invention claimed in Claim 17. Accordingly, one of ordinary skill in the art would not have combined *Dadachanji* and *Hellmuth et al.* as done in the Office Action. In addition, *Hellmuth et al.* discloses only the detection of moisture in objects such as building materials, foodstuffs, drugs or vegetation, which are objects typically less than one square meter in size. It would not be possible to expose an area that is greater than the size of the object. Accordingly, it appears inherent in *Hellmuth et al.* that its system could not be used to expose an area of a structure greater than one square meter. Hence, Claim 17 patentably distinguishes over the prior art for this reason as well as for those stated above with respect to Claim 12.

Claim 24 depends from Claim 18 as amended and includes all of the limitations of that claim. Because *Hellmuth et al.* fails to disclose the deficiencies of *Dadachanji* as noted above with respect to the rejection of Claims 18 and 22, Claim 24 patentably distinguishes over the prior art.

Claim 29 depends from Claim 18 as amended and includes all of the limitations of that claim plus additional limitations that are not taught or suggested by the prior art. For example, Claim 29 recites that the sensor unit includes a hyperspectral imaging system. A hyperspectral imaging system can simultaneously generally sense hundreds of wavelength bands as opposed to merely one or two wavelengths as disclosed in *Dadachanji* and *Hellmuth et al.* This provides the user with the opportunity to select exposure and reference wavelengths that may be best for a particular application, or to use multiple exposure and reference wavelengths to provide consensus on the presence of water in a structure. Neither *Dadachanji* nor *Hellmuth et al.* disclose this feature of the claimed invention. Accordingly, Claim 29 patentably distinguishes over the prior art.

Claim 51 depends from Claim 18 and recites that the exposed area of the structure is at least one square meter. As previously explained, neither *Dadachanji* nor *Hellmuth et al.* disclose this feature of the claimed invention. *Dadachanji* discloses the use of “beamed” radiation, which has a relatively small width. *Hellmuth et al.* disclose use of their system in connection with objects such as building materials, foodstuffs, drugs or vegetation that are generally smaller than one square meter, and not comparable in size to a structure such as a building or house. Accordingly, for this reason and those previously stated with respect to Claim 18, Claim 51 patentably distinguishes over the prior art.

### Summary

Claims 30 and 31 have been rejoined for examination with the species of this application. It is submitted that the specification has been amended as necessary to overcome the objection to same. Further, it is submitted that Claims 8, 10-13, 16, 29, 32, 34-37, 39, 44, 49 and 53 have been amended as necessary to overcome the rejections under 35 U.S.C. 102(b)/103(a). Accordingly, reconsideration of Claims 8, 10-13, 16, 29, 32, 34-37, 39, 44, 49 and 52, consideration of Claims 30 and 31, and an early Notice of Allowance for all pending claims is requested.

If the Examiner has any questions, kindly contact the undersigned at the telephone number listed below.

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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### IN THE SPECIFICATION

Replacement of paragraph at page 5, lines 21-23 of the specification:

“A radiation wavelength that is not significantly absorbed by the material composing the structure” means a radiation wavelength at or near the center of a valley or minimum in a wavelength range in the absorption spectrum of such material.”

### IN THE CLAIMS

8. (Amended) A method comprising the steps of:

- a) exposing a predetermined area of a structure with first electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water;
- b) sensing second electromagnetic radiation from the structure, the second electromagnetic radiation based on the first electromagnetic radiation; and
- c) determining whether the water exists in the structure, based on the second radiation sensed in said step (b).

[A method as claimed in claim 1, wherein] the predetermined area of the structure exposed in said step (a) being [is] at least one square meter.

10. (Amended) A method comprising the steps of:

- a) exposing a predetermined area of a structure with the first electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water;
- b) sensing the second electromagnetic radiation from the structure, the second electromagnetic radiation based on the first electromagnetic radiation; [and]
- c) determining whether a water-suspect area exists in the structure, based on the second radiation sensed in said step (b);

[A method as claimed in claim 9, further comprising the step of:]

d) if said step (c) determines that a water-suspect area exists in the structure, testing the water-suspect area using at least one of a moisture detector, capacitance meter, an endoscopic probe, and a resistivity meter; and

e) determining whether water is present in the structure, based on the testing of said step (d).

12. (Amended) A method comprising the steps of:

- a) exposing a predetermined area of a structure to electromagnetic radiation including at least one predetermined exposure wavelength significantly absorbed by water, and at least one predetermined reference wavelength that is not significantly absorbed by water;
- b) sensing electromagnetic radiation from the exposed predetermined area of the structure at a predetermined detection wavelength that is sensitive to the exposure wavelength if water is present in the exposed predetermined area of the structure, and that is not sensitive to the exposure wavelength if water is not present in the exposed predetermined area of the structure, and at the reference wavelength;
- c) determining whether the exposed predetermined area of the structure includes a water-suspect area, based on the electromagnetic radiation sensed in said step (b) at the detection and reference wavelengths;
- d) if said step (c) determines that a water-suspect area exists in the structure, testing the water-suspect area using at least one of a moisture detector, a capacitance meter, an endoscopic probe, and a resistivity meter; and
- e) determining whether water is present in the structure, based on the testing of said step (d).